Instructions for Servicing Vintage Sunbeam Mixmasters

Original Sunbeam Factory Service Information for Models:

1, 3A, 3B, 3 'Automatic'

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SERVICE BULLETIN NO. 14 - Revised April 27, 1949

Sunbeam Corporation
5600 Roosevelt Rd., Chicago

INSTRUCTIONS FOR SERVICING SUNBEAM MIXMASTERS
MODEL 1 (ONE) AUTOMATIC
MODELS 3A and 3B AUTOMATIC

(See Model Number Stamped on Motor Name Plate or on Mixmaster Base)

GENERAL

Before giving detailed instructions for servicing Models 1, 3A and 3B, a few general remarks should be helpful. Models 3A and 3B are alike except for color and are very similar to Model 1 except for external design and alight changes in electric circuit (compare wiring diagram on Page 2 with blue print over Page 3). The servicing instructions starting on Page 3, although referring directly to Model 1, actually apply to all three models.

The AUTOMATIC Mixmasters have greater power, and the speed control differs from that in earlier models, and in other mixers. Older Mixmaster models had a rheostat connected in series with the motor, to limit the voltage applied to the motor; which, in turn, limited the speed when a slower whipper speed was required. With this method there was a loss of power on the lower speeds.

The automatic Mixmasters have a governor control. The governor consists of contact breaking points placed in series with the motor, which open at a predetermined speed, and close again at a speed only slightly lower. Thus a constant speed is maintained, even with variations in the load or line voltage, and full power is available at all speeds. The breaker points are mounted on a lever arm and so arranged on a disc, which revolves with the armature, that centrifugal force opens the breaker points as the speed goes above a certain value. This value is varied when the switch knob is turned, changing the distance between the governor slide and the governor breaker point arm, and determining the speed at which the contact points will open.

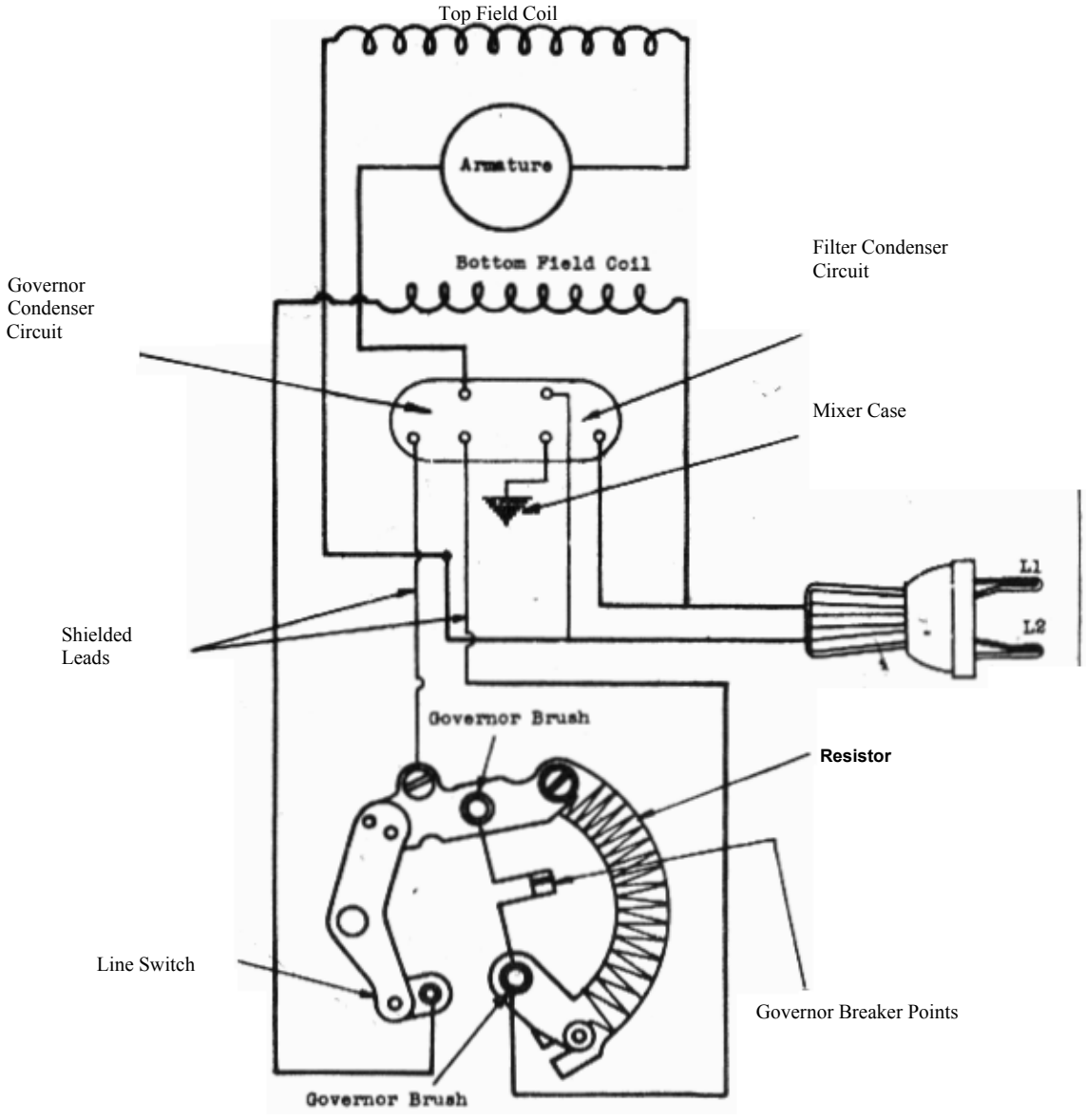
To give the breaker points a long life, a condenser and a resistor are shunted across them. The resistor not only lengthens the life of the points but also smoothes out the motor speed by allowing a small fraction of the current to flow through the motor when the breaker points- are open.

A second condenser is included in Automatic Mixmasters to eliminate radio interference radiated by the brushes and breaker points. Both condensers on Model 1 are housed in the same metal container. To distinguish between the lead wires running from each of the two condensers note that the breaker point condenser has metallic shielding on the lead wires, but the other condenser has no such shielding on the leads. On Models 3.A and 3B these two condensers are separate. See Key numbers 69 and 140 on parts list diagram.

There are two sets of breaker points on the governor disc but only one set is connected in the electric circuit and these are Tungsten points. The other

or "dummy" set is made of cold rolled steel. The purpose of the steel point and lever arm is to balance the movement of the tungsten point and its lever arm and to give smooth, quiet operation, which is important. Since the breaker points are mounted on a rotating disc to enable centrifugal force to act upon them, the current is fed to the rotating governor through a pair of stationary brushes, hence there are two governor brushes.

The wiring diagram below will help clarify the servicing and repair of this model.



Wiring Diagram for MIXMASTER
Model 1 AUTOMATIC

HOW TO SERVICE MODEL 1 AUTOMATIC MIXMASTER

1. If Mixmaster does not run when electric cord is plugged into an outlet of the same voltage shown on the motor name plate, detach the cord from the socket and remove switch cover (see Key #71 on the general diagram at the end of this bulletin) by taking out the two screws (90 and 65); then plug the cord into the socket again and with a piece of wood press down on phosphor bronze switch (105), taking care to keep the wood clear from rotating governor disc (100). If mixer should start that is an indication that switch rod and bakelite insulator (115) is short and should be removed from switch cover and a new one installed.

   If, on the other hand, the motor should not start when pressing down switch part (105) remove the governor disc assembly (100) and install a new governor disc as outlined in sections 5—A and 13—B. Then close the switch again as mentioned above. If motor still does not start proceed as follows:

1—A. Reassemble original parts (see sections 14.A and 15) and check for continuity of circuit with a test lamp. Place tips of tester wires on each prong of the appliance plug at the end of the cord. If the lamp (50W) lights to nearly normal brightness with the mixer control knob in any position other than "OFF" it indicates that the electric circuit is complete and the motor should run, otherwise the bearings may be tight--see section 3. If the lamp does not light the circuit is open, and a complete test should be made of the electric cord as in section 2. If light is illuminated to approximately half normal brightness, that indicates that the motor circuit proper is open and current is flowing through resistor (43) only--proceed to take motor down as in sections 5, 5—A, 5—B and 6 and test armature (27) and field coils (44), for open circuit, also inspect brushes (19) and brush springs (18).

2. Testing and Replacing the E1ectric Cord (33)

   Take out screw (87), remove cover (84) arid rubber insulation (95) and pull out connections from terminal insulation box. Place test tip on one of these connections and the other tip on first one prong of the appliance plug and then the other. One of these wires should light; if it does then move test tips over to the other connection in terminal box and to the other prong of the plug. A light should be obtained there also if the cord is in good order. If either one of these wires do not light thru, cord should be replaced.

2—A. Next, use a hot soldering iron and pliers, untwist the terminal leads and detach cord. Attach a new cord and plug and twist and solder leads. No taping of the leads need be done but fold leads carefully into terminal insulation box (96) so they do not touch the case. Replace rubber insulation (95) cover (84) and screw (87) and test mixer for ground by touching first one terminal prong of plug on cord with one tip of test lamp, and the other test tip on the motor case. Then move over to the other prong of the plug. The lamp should not light. If it does go back and check wiring.

3. Frozen Bearings

To check the bearings to find if any have seized because of lack of oil or other causes, grasp the lower part of the whippers (21), and turn inward. If the bearings for whipper spindle sleeves (13 and 20), motor bearings (45), or governor slide bearing (113) have seized it will be impossible to turn the whippers. To locate seized bearing and repair see sections 4, 5, 5-A, 5-B, 6, 7 and 9. If all bearings are free the whippers will turn freely. The whippers should not turn at all in an outward direction; if they do, that indicates a worm gear (9) is stripped and the gear should be taken out and replaced as in sections 4 and 16.

4. Removal of Whipper Spindle Sleeve and Oil Retainer Assemblies (13 and 20)

To remove whipper spindle sleeves unscrew the two gear case cover screws (8) and take off gear case cover (7). Put both whippers (21) in place and rotate inward until worm gear set screws (10) can be seen, then loosen set screws with "T" handled worm gear set screw wrench. Next, grasp the sleeves and pull them down and out of the gear case (5). If juicer sleeve (20) is frozen in the bearing it may be necessary to drive it out, using a brass rod which will pass thru the bearing and which can be driven downward from the hole in top of gear case. Another helpful method of removing frozen spindle sleeves is to turn the motor up-side-down and squirt kerosene from a can between the outside of the sleeve, and the bearing part of the gear case; then remove switch cover assembly (71) as in section 5. Grasp the governor disc (100) in one hand and insert a whipper in the frozen spindle sleeve and try to turn both in the same motor direction with a back—and—forth movement. The frozen spindle should gradually loosen until it can be rotated and set screw (10) is brought to the front of the gear case. If whipper spindle sleeves are frozen it is necessary to replace the sleeves only, see sections 16 and 17. But if the whipper spindle sleeves come out easily and the armature cannot be turned by grasping the worm shaft, the motor bearings (45) are probably seized or are badly gummed up. To continue it will be necessary to disassemble motor as in following sections.

5. How to Remove Governor (100) and Switch Mounting Bracket (105).

Remove screw 90 and 65 and gently tap switch cover 71 until the lacquer is broken and cover can be pulled straight back and off. A final test for frozen or gummy motor bearings (45) may be made at this point by grasping the governor disc (100) and turning it, which normally should turn freely (with the armature shaft) if bearings are in good order. If governor and armature do turn, it is probable that the governor slide bearing in the switch cover is frozen or gummy and should be examined, washed out with kerosene and re-oiled, or replaced with a new governor slide, bearing and lever assembly (113).

5-A. To continue the removal of governor (100) insert the Allen Head governor wrench into governor set screw (101) and loosen set screw, two or three turns, to the left. Governor may then be pulled off the armature shaft.

5-B. Next disconnect the three leads fastened under screws and nuts 106, 92, and 94 and take out two screws (91) which hold switch mounting bracket assembly (105) in motor. Remove this assembly, including the two governor brushes (97) and resistor (43).

6. Removing the Armature (27)

Following the work outlined in the preceding sections take out the two retaining screws (23) and gently tap front housing to help break the lacquer finish at the point where the front part of the motor case joins the rear part (28). When the two pieces have been separated the armature may be removed and a tight bearing located.

7. To Free Tight Motor Bearings (45)

First, thoroughly clean bearing holes by wiping with a clean rag, F1ush out oil holes and bearings (45) with kerosene fed from the spout of an oil can. Wipe thoroughly until dry. Rub armature shaft with an oilstone to remove scoring or roughness, apply oil to the shaft and see that it is free to turn in either bearing. (NOTE: If bearings are worn, or require replacement for any reason, return motor to factory for service. Bearings in Model 1 are oil less-type and must not be reamed.) It is well at this point, since the armature is out, to test it, and the field coils, for grounds, etc. as follows.

8. Testing Armature (27) and Field Coils (44)

To check the armature for grounds touch one wire tip of test lamp on the armature shaft, then touch the other on any commutator bar or bars. If test lamp lights a ground or conducting path is present between live parts and laminations, a condition that should not exist, and the armature should be replaced with a new one. Examine commutator bars to see if there are burned marks along the edges of any of the bars. Such marks indicate short circuited winding and armature should be replaced. Also observe if any wires leading from winding to the commutator are broken or damaged from rubbing on the brush leads. Replace armature if this condition is found.

Commutator should be smooth without excessive ridges or rings cut in it. Commutators with excessive rings cut in them by the motor brushes (19) should be replaced, or if a lathe is available they may be turned down with a smooth cut.

Check field coils through leads and motor case, for grounds, and through both leads for open circuit.

9. Assembling Motor

The armature shaft should be inserted into the back bearing, and the front housing then slipped part way onto the front of the armature shaft. The brush lead wires with the clips should be clipped onto the brush holders (18). The lead and clip coming direct from the field coil (44) should put on the brush holder on the right, and the lead and clip from the condenser on brush holder on the left, as the workman looks at the back of the motor, After the brush clips are put on the brush holders and the lead wires are carefully arranged not to rub against the armature, and when the condenser (69) has been started into the space provided for it in the

bottom of gear case (5), the two parts of the motor housing should be brought together with care to prevent dirt, etc. from getting between the joint. The two retaining screws (23) should be in place and then tightened up evenly so there will be no misalignment of bearings. This is very important. Be sure that the armature spins FREELY in the bearings at this point.

9—A. Note also how the front part of the motor housing fits into the back part. The position of the two parts when together is held approximately by a tongue, which is slipped into a slot, but this allows for some "play". After the retaining screws (23) are tightened see that the special gear Box Gauge, or a Power Unit attachment, when inserted into whipper spindle sleeve (20) also slips into the two holes in the base freely. If locating buttons on the bottom of the gear box gauge (or power unit) are to one side of the holes in the base, loosen retaining screws (23) and swing gear case (5) until alignment is attained, then tighten screws (23) again, evenly.

10. Commutator Brushes (19)

Insert brushes into brush holders (18) so that curved end of the brush conforms to the curved surface of the commutator (this is very important because it, minimizes sparking at the commutator). The brushes should be free from oil and grease and if worn short should be replaced with new. The brush spring (17) should have as good a tension as when new. If tension is low the spring should be replaced.

Insert brush springs and tighten brush screw (16) securely so screw will not loosen while motor is running,

11. Fitting the Switch Mounting Bracket Assembly (105) in the Motor

Put the Switch Mounting Bracket and resistor (43) in place and screw down the two mounting bracket screws (91). Facing the back end of the motor, the field coil (44) lead should be connected to point 106. The longest condenser (69) shielded lead should then be connected to point. 92 by first passing it under the switch lever, being sure that it does not rub or make contact in any place except under screw 92. Next fasten the other condenser shielded lead under nut 94, also taking care that it does not make contact with the case, which would cause a ground.

12. Governor Brush and Spring Assembly (97)

To fit the two governor brushes and springs in their holders, in the switch mounting bracket assembly (105), first see that the holders are free from carbon dust or any gummy substance resulting from carbon dust mixing with oil. The governor brushes should be approximately 11/32" long and perfectly round without worn spots forming shoulders on the sides as this interferes with the travel of the brush The springs should be in good condition to hold tension on the brush, and free from wear caused by rubbing on the sides of the brush holder. The copper pigtail connection should be fastened to the bottom coil of the spring at the brush so the spring will not have to carry the current to feed the brush. The straight portion on the other end of the spring locates in a hole at the bottom of the brush holder to prevent turning of the brush and excessive side wear on the brush. The

brush should be pushed down into the brush holder a few times to be certain that it will travel or slide freely in and out of the bolder. If governor brushes and springs are not in first class condition as outlined above they should be replaced.

13. Fitting the Governor (100) on the Armature Shaft

The governor assembly should be thoroughly examined before placing on the armature shaft. First inspect the brass collector rings on the back of the disc. If these are badly pitted or burned the governor (100) should be replaced unless it is possible to face off the rings in a lathe. Care must be taken, if this is done, to obtain a smooth cut and above all to see that the governor disc runs true on the arbor before and after facing. This is very important as a noisy motor, excessive governor brush wear, and worn bearings will result if disc does not run true, or if it is thrown out of balance. There is a limit to the amount of the cut or to the number of cuts that can be taken off the rings, because if the heads of the rivets which hold the rings to the Bakelite disc are cut away the rings will be thrown off at high speed.

13-A. Next examine the tungsten contact breaker point (102) mounted on the end of the lever arm. If badly pitted or burned the governor assembly (100) should be replaced. No filing, bending or changes should be made on the tungsten points, or on the lever arm. It will be noticed that there are two lever arms (102 and 103) on the disc but as explained in the introduction to this bulletin close observation will show that only one arm is fitted with tungsten points. The other points are larger and are made of cold rolled steel. These C.B.S. points carry no current but are for the purpose only of balancing the governor at all speeds.

13-B. After examination has showed the governor (100) to be in good condition or that a new one is necessary place governor on the armature shaft. First observe the depression on the armature shaft and place the governor on the shaft so that governor set screw (101) can be screwed into the depression, or hole, in the armature shaft. The governor brushes (97) must be forced back into the brush holders carefully as the governor is pushed onto the shaft so brushes will not be damaged or broken. Be certain that the set screw (101) is turned with the Allen Head Wrench until it is tight and that no wires are rubbing, as the governor is revolved by hand. The governor and armature should revolve FREELY.

The operation of the motor may now be checked by plugging the cord into a socket and carefully closing switch (105) with a pencil or round stick in much manner that it will not be struck by the governor (100) when it rotates. Motor should operate on “high” speed only.

14. Fitting Switch Knob (70) and Switch cover (71) Assembly

Examine parts to see that the governor slide assembly (113) travels in and out as the switch knob is turned, when held in the normal position. The switch rod (115) should be thrust forward as the switch knob leaves the “OFF” position on the outside of the cover, and should stay out for the remainder of the travel of the governor slide.

The felt wick (110) in the cover should feed oil to the governor slide bearing.

14-A. If the parts referred to in the preceding section are all in good shape the switch cover (71) may be put in place. First turn the Switch Knob (70) to the "OFF" position, then governor slide (113) should be started on the armature shaft in such manner that the forked shaped legs will enter the slot provided in the governor disc (100) around the hub. The cover should then slip into place and the two screws (90 and 65) can be inserted and screwed in. The rear handle bracket (77) should be placed under screw 90. WARNING: Do not start mixer when back cover is on without first adjusting armature thrust screw, if thrust screw (26) and switch knob (70) have been disassembled (see section 15).

15. Armature Thrust Screw Assembly (26)

The armature thrust screw assembly consists of a piece of oil-less type bearing material pressed into a hole in the end of a steel screw. The thrust screw assembly (26) should be turned to the right with a screwdriver until the bearing end presses against the end of the armature shaft, then the thrust screw should be backed off (turned to the left) 1/8 of a turn. While the thrust screw is held in this position with the screwdriver, the thrust screw lock nut (25) should be tightened securely with the socket wrench supplied for adjusting thrust screw lock nut. Thrust screw nut washer (88) and switch knob (70) are also held in p1ace by thrust screw lock nut 25.

The motor bearings (45) may be checked at this point by plugging the cord into a socket and turning the switch knob (70). All speeds should be obtainable.

16. Fitting the Worm Gears (9) in the Gear Case (5)

Before installing worm gears, inspect the whipper spindle sleeve bearing surfaces and if scored or rough, smooth the bearing, or if necessary replace gear case (5). Next inspect the whipper spindle sleeves (13 and 20) and remove scores or roughness with fine emery cloth or file. If scored too much the sleeves should be replaced with new.

To start assembling the parts, hold gear (9) by the metal hub with the special thin pliers and insert gear into right hand side of the gear compartment, with the hub down. Also, hold gear so the setscrew hole in the hub is to the front, facing the workman. This is important, because it determines the timing of the whippers (21). Next, while holding gear (9) in position as described above (use left hand for this purpose), take the juicer spindle sleeve (20) in right hand, and push it up thru the gear case (5) into the gear (9). While doing this, have the depression for worm gear set screw (10), which is drilled on the sleeve, in line with, and visible thru the set screw hole in the hub of the gear (9). Insert set screw (10) using special "T" handled socket wrench and turn down set screw' TIGHTLY.

Follow the same procedure with the other worm gear (9) and assemble it to whipper spindle sleeve 13. Again be sure that the gears (9) are fitted to sleeves with set screw holes held exactly in front, in order to get proper timing of the whippers. It is well to put film of oil on the whipper spindle sleeves (13 and 20) before inserting them into the gear case (5) bearings.

17. Greasing the Worm gears

Put about TWO TABLESPOONS ONLY of special Mixmaster lubricant (86) into the gear compartment, placing it in the metal worm and gear (9) teeth as much as possible. It is essential to use special Mixmaster lubricant. This grease was chosen after many tests because it adheres properly to the surfaces to be lubricated, and does not thin out when warm.

Fit gear case cover (7) and use new gasket (6) if necessary. Fasten cover with two screws (8) and tighten. Place a few drops of oil in all oil holes and run motor idle for a time to free the gears.

18. Adjusting the position of the Motor and Whippers (21)

The adjustment screw (32) is provided in the top of the upright (46) so the position of the whippers may be set permanently for the bowls, and to allow a free engagement of the Power Unit Attachment and other attachments, between the two holes in the base of the Mixmaster' and the motor.

To properly adjust screw 32, put the motor on the standard, take the Special Gear box gauge, or a Power Unit Attachment, and slip it into the whipper spindle sleeve (20). Lower the motor head to its horizontal position and note whether the two buttons on the bottom of the foot of the gear box gauge, or Power Unit, are forward of the two holes in the base, or back of them. If ahead of the holes, loosen lock nut (31) and turn screw (32) down until buttons enter holes freely. Also check the space between the bottoms of the whippers (21), and the surface of the mixing bowl (48, 49 and 62). Whippers must come close to surface of bowl so all ingredients in the bowl will be mixed and so bowl will turn) but the whippers should not rub on bowl. If whippers rub set adjusting screw 32 higher. If whippers do not come very close to surface of bowl, adjust screw 32 lower. When the screw has been properly adjusted lock it in place by tightening nut 31.

19. Replacement of Condensers (69)

19—A. Should either the condenser for governor breaker points, or the filter condenser (see the general remarks on page one of this bulletin) fail, the removal of both condensers is necessary since they are housed in the same metal container. Proceed as follows:

First, remove switch cover assembly (71) and governor (100) as in section 5 and 5—A, an4 take out switch mounting bracket (105) as in section 5—B.

Second, take out retaining screws (23) as in section 6 and separate motor housing.

Third, remove screw (87) terminal box cover (84) and terminal insulation cover (95). Untwist the lead wires with a hot soldering iron and pliers, and remove the terminal insulation box (96) by lifting straight up. The condenser (69) is now ready to be taken out but workman should carefully note the layout of the leads before removing. Six leads come out of the condenser unit. The two with the metal shielding and a third in the same group, which has a brush clip on it, are terminals for the governor breaker point condenser, and should be on the left side. The other three leads, on the right side, are for the filter condenser. The two filter condenser leads without lugs are connected across the line cord in the terminal insulation box (96) and the third filter condenser lead with lug is connected to the motor housing under screw 66.

19—B. To fit a new condenser unit start the two long shielded leads in between the motor housing and field coil (44); then the three filter condenser leads should be led down into terminal box space in motor case, and the condenser unit pushed all the way up in the gear case housing (5). Do not cross shielded leads over each other, or cross the filter condenser leads because they are in the correct relation to each other. Connect the ground lead from the filter condenser (the lead with the lug) under screw (66). Next replace the terminal insulation box (96) and bring the field leads and condenser leads up thru the holes provided. The leads may now be connected. Twist one field lead, one filter condenser lead and one cord lead together and solder. Then repeat the same with the other 3 leads, twisting and soldering. Fold soldered leads into terminal insulation box (96) carefully to avoid grounds and replace terminal insulation (95), terminal box cover (84) and screw (87). Reassemble motor as in sections 9 to 14-A.

20. Radio Interference

Model 1 Automatic Mixmaster is equipped with a filter condenser similar to that used in previous models. This part practically never requires attention, but if there should be extreme radio interference, it may mean the filter condenser needs to be replaced--proceed as in sections 19, 19-A, and 19-B. Should the user of the Mixmaster prefer not to have the non—radio interfering feature it may be removed by disconnecting the filter condenser ground lead from the motor housing under screw (66) and taping the end of the wire.

Synopsis of Repairs and How to Make Them

21. Motor crawls but has no “High” Speed

21-A. Contact breaker points (102) may be burned and do not make contact; motor runs on current received thru resistor (43) only. Replace governor (100) as in sections 5, 5-A, 13, 13-A, 13-B, 14, and 14-A.

21-B The Governor brushes (97) may be worn away. Repair as in sections 5, 5-A, 12, 13, 13-A, 13-B, and 14-A.

22. Motor Runs on High Speed Only

22-A. Breaker point condenser (connected across terminals 92 and 94) is shorted. Replace condenser unit (69) as in section 19.

22-B. Tungsten points (102) may be fused together. Replace governor (100) as in sections 5, 5-A, 13, 13-A, 13-B 14, and 14-A.

23. Motor Jerks When Running, Especially on Low Speed

23-A. Breaker point condenser (connected across points 92 and 94) is open. This is also accompanied by excessive sparking at the governor breaker points (102). Replace condenser unit (69) as in section 19.

23—B. Open circuit in resistor (43). Replace resistor by taking down back end of motor as in sections 5, 5-A, 5-13. Change resistor and reassemble as in sections 11, 12, 13, 13-B, 14, 14-A.

24. Motor Runs Normally, Except 1st Speed is Too Low
(Less than 275 R.P.M. at whipper spindle sleeve (20).

24—A. Governor (100) needs replacement as in sections 5, 5-A, 13, 13-B, 14, 14—A.

25. Motor Does Not Run At All.

25—A. Switch Rod (115) is short, or switch (105) is open. Repair as in section 1, 5, 5-A, 5-B and examine silver contacts on 105, Possibly switch lever (105) should be bent down on the contact end and up in the center so as to touch end of switch rod. Reassemble as in sections 11, 12, 13, 13-A, 13-B, and 14-A.

25-B. Commutator brushes (19) need replacement. See section 10.

25-C. Governor brushes (97) need replacement. Repair as in sections 5, 5-A, 12, 13, 13-A, 13-B, and 14-A.

25—D. Motor Bearings (45) frozen. See section 3.

25—E. Whipper Spindle Sleeves frozen in gear case bearings. See section 3.

25—F. Cord broken. Test and repair cord as in sections 1—A, 2, and 2-A.

26. Excessive Radio Interference

26-A. Condenser may have open circuit. See section 20.

27. Excessive Shock from Motor Case.

27-A. Ground, or short circuit, thru insulation. Take down motor and test as in sections 5, 5-A, 5-B, 6, 8.

27-B. If filter condenser is grounded to its own metal container, replace condenser. See section 20.

28. Motor Loss of Power
(temperature rise excessive)

28-A. Partially frozen bearings. See section 3.

28-B, Armature requires replacement. Possibly commutator brushes are sparking badly. Repair as in sections 5 to 14-A inclusive.

28—C. Field coils partially shorted or "slow". Return motor to factory for service.

29. Motor Runs but Whippers Do Not

29—A. Worm gear (9) stripped or loose from metal hub. Repair as in sections 4, 16 and 17.

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THE TOOLS REQUIRED FOR USE WITH BULLETIN ARE:

One Tool T—20213 Socket Wrench for adjusting Thrust Screw Lock Nut (75N)

One T~o1 T—16023 "T" Handled wrench for worm gear set screw (P9922)

Standard Allen Head Wrench, size 5/64". Purchase locally.

Standard Long Nose pliers. Purchase locally.

Single Open-end wrench for adjusting screw lock nut (P6649). Purchase locally.

Open End Wrench for adjusting screw (P—20751). Purchase locally.

Special Gear Box Gauge (Not Available). Adjust Height 6—3/8" from base.

SUNBEAM CORPORATION
5600 West Roosevelt Road
Chicago 50, IL. — U. S. A.

SERVICE BULLETIN NO. 18
INSTRUCTIONS FOR SERVICING SUNBEAM MIXMASTER
MODEL 3 AUTOMATIC
(See Model Number Stamped on Bottom of Mixmaster Base)

Revised May 14, 1949

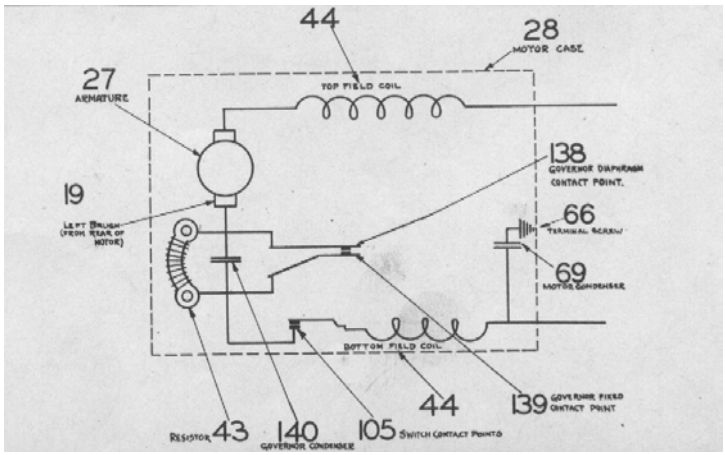
The Model 3 Automatic Mixmaster motor is controlled by an air governor that operates on the following principle: A fan draws air into the motor housing through the grille on the front, carries it past the armature and field coils, on through the governor control, and delivers it out the back of the motor. Between the fan and the air vent is a Bakelite disc that closes the back or the motor housing. In the center or the disc a rectangular opening is placed, then across the opening a thin blue steel shutter plate, or diaphragm is fitted with one edge fixed to the Bakelite disc. A contact breaker point is riveted on the diaphragm. Directly opposite another breaker point is attached to an arm.

As the air is pulled through the motor it pushes back the diaphragm to provide an opening for the air to flow through and this action breaks the current flow through the governor contact points. The amount or air pressure required to open the diaphragm depends upon the resistance of the diaphragm to the air. To control this resistance, tension is applied through the contact breaker point fitted on an arm (this breaker point will be celled the Fixed Contact throughout the remainder of this bulletin, because the position of that contact point remains fixed for any particular speed, its position being determined by the setting of the switch knob).

When you turn the switch knob at the back of the motor you increase or decrease the tension on the diaphragm by moving the arm slightly backward or forward. With the switch knob turned to the lower speeds the tension against the diaphragm is very light; the diaphragm opens easily, thereby breaking the current quickly. But when the knob is turned to the higher speeds the arm applies more tension on the diaphragm and a greater air pressure is required to open it and break the current. Thus by adjusting the tension on the diaphragm and by alternately making and breaking the current flow at a very rapid rate the governor maintains a constant motor speed under all load and nominal voltage variations.

A condenser and resistor fitted on the Bakelite governor disc are shunted across the governor breaker points to give the points long life and to reduce radio interference. The resistor also smoothes out the operation of the motor by allowing a small fraction of the current to flow through the motor while the breaker points are open momentarily. A second filter condenser is fitted in the lower part of the motor housing to reduce and eliminate radio interference.

Wiring Diagram Model 3 Automatic Mixmaster



HOW TO SERVICE MODEL 3 AUTOMATIC MIXMASTER

A. Taking the Motor Apart

The parts referred to in this bulletin are illustrated on the diagram attached to the end of the bulletin with parts list. The tools that will be mentioned are described on page 9. Threads on all screws and other fasteners used in the Model 3 Automatic are right hand, except armature thrust adjustment cap (see Key number 107 on parts diagram), which is left hand.

A-1. To take off switch knob (key number 70) in rear of motor, remove switch knob screw (119.). Pull out knob, also take out round fiber switch pin (325) and. square speed adjustment cam pin nut (136) and cam pin (137).

A-2. To remove rear motor cover (128), turn out the two round head rear cover screws (65) at the bottom (short screw) and top (long screw) of cover. When removing cover it may be necessary to tap it a little to break the seal caused by the paint sticking where the cover joins the motor housing.

A-3. To take out Bakelite governor assembly (100), first remove the three nickeled mounting plate screws (91) and two of the binder head screws (122), which fasten one lead wire to the switch lever (105) and one to the governor diaphragm (138). Pull out Bakelite governor assembly while guiding the two lead wires carefully through the slots at the outer edge of the Bakelite disc. Care should also be taken not to break or lose the thin rubber gasket (116) fitted around the circumference of the Bakelite disc.

A-4. To remove the fan housing and rear bearing bushing assembly (key number 135) unscrew the three hexagonal fan housing retaining studs (130) –1/4 in. wrench is used for this purpose - and pull out fan housing, using pliers if necessary. Be careful of the two wire leads.

A-5. Now remove both armature carbon brushes (19) by unscrewing black Bakelite cap brush screws (16) on outside of motor housing. Exercise care in not letting brush springs (17) or brushes jump out end get lost.

A-6. To loosen the baffle plate (132) turn out the two flat head baffle plate-retaining screws (23) and remove rear cover locating key (131).

A-7. Armature assembly (27) may now be removed, together with the fan (133) and baffle plate (132), without disassembling the parts in the front of the motor, by just pulling out the armature assembly. NOTE: If it is planned to fit this assembly back in the motor without adjusting the parts in the front of the motor, care should be taken to prevent any change in the original relative position of the two whipper spindle s1eeves (13 and 20), otherwise the spindle sleeves will get out of alignment and the blades on the whippers will strike each other when turning. See Section B2A for proper method of fitting armature assembly into the motor without removing parts at the front.

A-8. The fan (133) can be taken off the armature by removing fan retaining nut (134). 7/16 in. wrench may be used for this purpose. Turn nut to the left.

A-9. Brush holders (18) occasionally become loose because of shrinkage due to heat from the motor under prolonged use. To tighten or replace brush holders, set screws (22) which keep the holders in place can be adjusted. With a long thin screw driver inserted in the same screw hole through which baffle p1ate retaining screws (23) enter.

A-10. To remove front motor cover (7) and Bakelite motor handle (78), first push Bakelite handle down into position along the side of the motor, then unscrew grille and front motor cover retaining screw (114). Pull out the front cover. The Bakelite handle may now be separated from the front cover by turning out the two handle screws (73) and split lock washers (80) which hold the cover and handle together.

A-11. Take off gear case cover (121) by turning out the four gear case cover screws (108). Be careful with gear case cover gasket (6).

A-12. To remove whipper spindle sleeves (13 and 20) and worm gears (9) if the armature is in the motor, put both whippers n the sleeves and rotate whippers inward until worm gears set screws (10) are facing the workman. Then take the setscrews out of the worm gears with wrench T16023 and pull whipper spindle sleeves down and out of the gear case. Next remove the worm gears.

B. Assembling the Motor

B-1. If brush holders (18) have been removed, put them back in the motor housing, being careful to see that the broached flats on the inside lie parallel with armature shaft. Tighten brush holders in place with set screws (22), using thin screwdriver as described in Section A-9.

B-2. If front of motor is not assembled; that is, if whipper spindle sleeves (13 and 20) and worm gears (9) are not in gear case, put armature assembly into motor housing from the rear - commutator end first - being careful not to bend the two vanes of the centrifugal brake (27A), which is fitted around the armature shaft next to the commutator. The worm end of the armature shaft must be pushed all the way through the front bearing hole and into the gear housing. Be sure to have brushes out of the motor when fitting armature into p1ace.

B-2a. If the parts in the front of the motor have not been taken out (the whipper spindle sleeves, worm gears, etc.), the armature assembly may be fitted into the motor housing without removing parts in front if the following precautions are taken to assure proper position of whipper spindle sleeves (see Section A -7). Put the two whippers into the spindle sleeves and turn each so that the blades of either whipper clear, with maximum distance the blades of the other whipper. Then push armature all the way in, and again check relative position of whippers. If the whippers are not in best relative position to avoid striking of blades, pull out armature, revolve one whipper a fraction of a turn in the direction necessary to correct the adjustment and put armature back in again.

B-3. Rep1ace baffle plate (132), being careful to line up keyways. Put in

retaining screws (23) and tighten in place. When fitting baffle plate, care should be taken not to pinch the two lead wires coming up from the field coils. The wires must be passed through the two semi-circular slots in extreme edge of baffle plate.

B-4. Fit the fan (133) on armature shaft, blades inward. Put in fan retaining nut (134) and tighten with 7/16 wrench, while keeping the fan from turning by inserting a screwdriver between fan blades, with bit end of screwdriver supported against the slot in either of the two bolts (23).

B-5. Assemble commutator brushes (19) and springs into motor housing, using care to insert brushes into holders so that curved end of brush conforms to curved surface of commutator. If brushes are old and worn, replace with new.

B-6. To assemble parts in gear case at front of motor, hold worm gear (9) by the metal hub with adjustable pliers, and insert gear into the right hand side of gear compartment - metal hub down. Also, hold gear so the gear set screw is directly in front of the worm. This is important in order to prevent interference between whipper blades. Next while holding gear in position described, take juicer spindle sleeve (20) and push it up through the gear case into the gear. While doing this the depression drilled on the surface of the sleeve must be aligned with the setscrew hole in the gear hub. Insert gear set screw (10) using socket wrench Tl6023 and turn down setscrew tightly; but have the flat side of the head which 1s nearest the bottom of the gear case exactly parallel with the bottom of gear case surface. Follow the same procedure with the other worm gear on left aide and assemble it to whipper spindle sleeve (13), again being sure that the gear is fitted to sleeve with set screw hole held exactly in front, in order to get proper timing of the whippers. A film of oil should be put on whipper spindle sleeves (13 and 20) before inserting them into the gear case.

B-6a. To grease the worm gears, put about two tab1espoonsful only of special Mixmaster lubricant (86) into the gear compartment, placing it into the worm end gear teeth as much as possible. USE ONLY MIXMASTER GREASE, a lubricant that has been chosen after many tests as the best suitable for this purpose. After greasing the gears, put on gear case cover (121), front motor cover (7) and grille (124).

B-7. Put fan housing (133) into place, also locating key (131) being careful to guide the housing properly past the two lead wires which should come up through the two semi-circular slots at the edge of housing. Fasten fan housing in place with the three hexagonal retaining studs (130), using 1/4 in. wrench. But before doing this, be certain that armature thrust adjustment cap (107) is either removed or is only screwed down slightly, otherwise the armature shaft may be bound when fan housing is tightened down.

B-8. To adjust armature thrust cap (107), temporarily connect the two lead wires projecting through the fan housing by taping them together. Then slightly touch wall plug into electrical outlet of the same voltage as stamped on Mixmaster nameplate. The motor will run and if a ringing noise is heard, due to fan rubbing against the walls of either its housing or baffle, the thrust cap (107) must be turned to the right or left until the noise is no longer heard. To do this, use a 3/4 in. combination wrench and first loosen thrust cap lock nut (106), then adjust

the thrust cap. If motor is put on the Mixmaster stand, both hands will be left free for this adjustment. When the rubbing noise is heard, pull wall plug out immediately, turn thrust cap and try again. When a point is found where the rubbing noise is not heard, leave wall plug in outlet so motor will run continually. Then, very slowly advance thrust cap (107), by turning it to the left until rubbing noise is just heard. At this point back up thrust cap from 1/16 to 1/4 turn to the right and lock in this position by bringing up lock nut (106) tight against the thrust cap. Pull wall plug from outlet and untape the two lead wires that were connected temporarily for this adjustment.

B-9. Put governor assembly (100) In position - with resistor (143) and condenser (140) mounted in place - and align keyway at edge of Bakelite disc with key in motor housing. Have the two lead wires pass up through the two slots at edge of Bakelite disc. Fasten governor in place with three round head mounting plate screws (91). Fasten the two clips at ends of lead wires with two binder head screws (122), one to the fixed end of bronze switch lever (105) and the other to the fixed end of the governor diaphragm. This last screw also holds fast the looped end of the wire coming through from the governor condenser (140). At this point the motor should run at high speed when the wall plug on the cord is connected to an electrical outlet and the bronze switch lever (105) is pressed down with an insulated piece of material (wood, etc.).

B-10. To complete the assembly of the rear of the motor, proceed as follows: Place thin rubber insulating ring gasket (116) around Bakelite governor disc (100), and push it back against motor housing. Remove switch knob (70) from rear cover (120) if not already taken off, then put rear cover on the end of the motor and fasten in place with the two round head rear cover screws (65) at top (long screw) and bottom (short screw). Turn these two screws to the right until they are tight, then turn the screws back to the left one full turn - important! Fit speed adjustment cam pin (137) into square hole in rear cover, Bakelite end first. Also put round switch pin (125) in round hole. Now place switch knob (70) on rear cover, first making certain that knob is turned so that white arrow points upward - that is, so arrow points to any position between one and ten. Fasten switch knob with screw (119) using washer (88) underneath the head.

B-11. Adjusting the Speed Control: The speed control is adjusted by inserting special 3/32 in., long screw driver blade through small hole in switch knob (70) near center of knob; and turning speed adjustment cam pin (137) to the right or left with the screw driver. When turned to the right the speed of the motor is slowed. When turned to the left, the motor speed is increased. Before attempting to adjust the speed control, see that upper and lower screws (63) that hold rear cover in place are loosened about one full turn as described in Section B-10. Then set the white arrow on switch knob at 1, the first and lowest speed, and turn speed adjustment cam pin with thin screwdriver to left or right as required, until whipper socket sleeves (13 and 20) revolve at a speed of about 400 revolutions per minute. Do not press in with screwdriver when making this adjustment - check speed with screwdriver entirely removed.

B-12. After speed has been adjusted according to Section B-11, turn switch knob (7) to 10 - high speed - and tighten upper and lower rear cover screws (65) to a point where the motor operates at maximum speed as

determined by ear (the higher the motor speed the higher will be the pitch of the sound). The two upper and lower cover screws (65) fasten to the fan housing, which in turn contains the rear armature shaft bearing; hence if the screws are adjusted too tight they will spring the rear bearing out of alignment, and slow down the motor by preventing the parts from turning freely.

REPAIRS

C. When Motor Does Not Run.

C-1. Turn switch knob to No. 10 speed and check electrical outlet where motor cord. is plugged in to see that outlet is in good order and that it supplies electric current of the same voltage stamped on the bottom of the Mixmaster base. Then check continuity of circuit through motor and cord with a test lamp. Place tips of test wires on each prong of the wall plug fitted on the end of the motor cord. Have the switch knob turned to No. 10 speed. If the test lamp (50 watts) lights up to practically full brilliance it indicates that the circuit is continuous through the motor and cord. Unless there is a short through the motor housing, the motor should run. Test for grounds or short circuits by putting tester wires on the bare metal part of motor housing and on each prong of wall plug. A "ground" will be indicated if the lamp lights. If a ground is not indicated, yet motor does not run, it is probable that bearings are bound - see Section C-3.

C-2. If ground is indicated by test lamp, remove terminal box cover screw (87) and take off terminal box cover (84) where cord enters motor. Remove soft rubber insulating cover (95) and examine wire connections for grounds or shorts. If connections appear to be in good order, detach cord from motor by applying hot soldering iron to connections and pulling the wires apart. Remove the cord. Disconnect filter condenser ground wire from motor housing by loosening condenser ground terminal screw (66). Remove terminal insulation box (96) and motor filter condenser (69). Now check again for grounds between each of the two projecting wires and the motor housing. If no grounds are present, a short must have existed in either the cord or filter condenser that have been removed from the motor. Check both. If, however, a ground still exists within the motor, take motor apart according to Sections A-1 to A-8 and check for grounds in each part which carries current by examining the part carefully and testing with the tester lamp wires applied between each part and the motor case. Do this before removing the part from the case. Check armature for grounds by applying test lamp wires between a commutator segment and armature shaft or armature laminations. Likewise, to test field coils for ground, apply test wires between motor case and leads projecting from field winding.

C-3. If armature or whipper spindle sleeves (l3 and 20) have seized in bearings, take motor apart as described in Section A-1 to A-12. When spindle sleeve is frozen the armature can be removed only by twisting in counter-clockwise direction. Flooding with kerosene may be found helpful in removing tight whipper spindle sleeves. After parts have been removed, clean bearings with rag soaked in gasoline (or kerosene),

remove scored marks or roughness on armature shaft or spindle sleeves with an oil stone, and if parts are worn badly replace with new. (NOTE: If armature hearings (45 and 135) are worn or require replacement for any reason, return motor to factory for service. The armature bearings in model 3 motor are oil-less type and must not be reamed.) Reassemble motor according to Sections B-1 to B-l2.

C-4. If when tested according to Section C-1, the test lamp indicates that circuit is not continuous through prongs of plug when switch knob is set at 10, there is either an open field coil, broken connection, or poor contact somewhere in the circuit. Possibly the switch contact (105) is not good due to switch pin (125) being short. Remove rear motor cover (128) according to Sections A-1 and A-2 and press down against switch lever (105) with a piece of wood, so as to make contact. If motor starts, this indicates that switch pin (125) is short. Either replace switch pin, or bend up bronze switch lever in the middle and down at the contact end slightly.

C-5. If motor does not run when switch lever (105) is pressed down, as described in Section C-4, check for continuity of circuit through governor breaker contact points with test lamp, by placing one test wire on governor diaphragm (138) and the other wire on switch contact point under the switch contact on the end of switch lever (105). If test lamp fails to light to full brilliance, an open circuit must exist between governor contact points. Clean the governor contacts and burnish them as instructed in J-2a.

D. Motor Does Not Operate on Low Speeds, and Runs Slow and Very Jerky When It Does Begin To Run On Higher Speeds.

D-l. Speed is set incorrectly. Reset according to Section B-11.

E. Governor Does Not Control On Low Speed Except Under Load

E-l. This is probably due to the frictional load of the motor being so light that the small current flowing through the resistor (43) is sufficient to maintain a motor speed above that for which the governor is set. A centrifugal brake (27A) has been included in model 3 motor to apply an additional load at low speed to prevent this. Should this occur, however, it can be remedied by taking motor apart according to Sections A-1 to A-7, removing armature and slightly bending blades of centrifugal brake towards each other.

F. NOISE

F-1. When motor is noisy at high speed only, replace speed adjustment switch knob (70) with later type having smaller cam rise that regulates top whipper speed at 1000 R.P.M. (When ordering replacement switch knobs, ask for part IIX.)

F-2. When motor is noisy on all speeds, armature thrust adjustment cap (107) may be worn or baffle plate retaining screws (23) may be loose. Take motor apart according to Sections A-1 to A-3 and remove thrust cap with 3/4 in. wrench, after first loosening thrust cap lock nut (106). If worn, replace with new thrust cap. Adjust new thrust cap as instructed in Section B-8.

G. Radio Interference

The model 3 automatic motor is well filtered with condensers (69 and 140) to reduce and eliminate radio interference, and will give satisfaction in the great majority of homes. Local conditions in some places, especially in communities some distance away from radio stations, in cases where indoor aerials or long unshielded "lead-ins" are used, in short wave reception, etc. may cause motor static to be heard. A motor that is entirely satisfactory in one home may interfere to some extent when used in another home where those exceptional conditions exist. If the user wishes to overcome extreme conditions and is willing to go to some additional expense in doing so, the factory can supply a supplementary filter that will be effective in some homes. The supplementary filter plugs onto the wall plug that is attached to the end of the motor cord. When ordering ask for Radio Filter Plug C24Y. (Note: Filter plug C24Y can be used with model 1 automatic motor also, but the circuit in the motor must be changed first. For this change, return motor to factory.)

H. If there is no change in speed when the switch knob is moved between speeds 8, 9 and 10 - while the motor is running idle - the cam rise on the speed adjustment switch knob (70) is too great. See Section F-1. Replace switch knob with later type 11X, which limits high speed to 1000 R.P.M.

J. Motor Jerks When Running, Especially On Low Speeds

J-1. Speed may be set too low. Reset according to Section B-11.

J-2. When speed has been adjusted according to Section B-11 and motor still jerks when running: -

J-2a. Governor tungsten contact points may be dirty or pitted. A film of oil on surface of governor contact points will also cause motor to jerk. Remove rear motor cover (128) as described in Sections A-1 and A-2. Spring back the blue steel governor diaphragm so that the tungsten governor points are exposed (but do not pull diaphragm back so far as to cause it to set permanently in a new position). Then rub both contact points with file (Auto Distributor Point File) for cleaning contacts, until all roughness, dirt or oil has been removed; or if surfaces of contacts are badly pitted, replace governor assembly (100). Check the cups fitted around the points to see that cups do not rub or catch anywhere, and see that contact points are centered. Also look at governor condenser leads (140) and make sure these are connected securely with tight binder screws (122). Then put on the rear cover and try motor. If unevenness, or jerk, has not been eliminated, take off rear cover (128) again, remove governor assembly (100), and fan housing (135) as described in Sections A-2 to A-4. Inspect fan (133) to see if it is held tight on armature shaft with fan retaining nut (134). If fan is loose tighten nut against fan as much as possible and reassembly motor.

J-2b. The governor diaphragm (138) may be rubbing against sides of Bakelite disc. There should be an approximate clearance of .010 inch between the edge of diaphragm and the Bakelite. If the diaphragm is rubbing, press or push diaphragm into the proper position with a screw driver having a fine blade, or if necessary replace governor.

J-2c. The speed adjustment cam pin parts (137) may be loose. Take off rear cover (128) and examine cam pin assembly. The Bakelite capped screw and square slot nut should fit together snugly. If they do not, remove nut from screw, and pinch the two sides of the nut against the slot with a pair of pliers, so that screw and nut do make a snug fit.

J-2d. The governor resistor (43) or governor condenser (140) may require replacement. Remove governor assembly (100) according to Sections A-2 and A-3. Place a piece of paper between the two governor contact points and touch test lamp wires to the two resistor fastening screws on the back of the governor assembly. If resistor (43) is in good order and condenser (140) is not shorted the test lamp will light very dimly. But if resistor is open, the test lamp will not light at all; and if the condenser is shorted, the lamp will light to full brilliance. When either resistor or condenser need to be replaced, change only those parts; it will not be necessary to replace the complete governor assembly.

J-2e. The switch contact pressure may not be great enough. If switch spring lever (105) should just barely make contact, the vibration of the motor may make the switch contact unsteady and cause the motor to jerk. Bend up switch spring (105) in the middle and down at the back end slightly, or replace switch pin (125) If pin is short.

* * * * * * * *

The Tools Listed in This Bulletin are:

Tool No.	
T16023	For Set Screw in Worm Gear (P9922)
Standard	Box End Wrench, Size 3/4 in.
Standard	Spintite Wrench, Size 1/4 in.
Standard	Screw Driver, length 6” blade width 3/32
Standard	Extra deep Socket, Size 7/16 In.
Standard	File (Automobile Distributor Point File)
Standard	Adjustable pliers.

*Tools with T number - order from the factory.
Standard tools - purchase locally.

Sunbeam Corporation
5600 W. Roosevelt Rd.
Chicago 50, ILL. U.S.A.

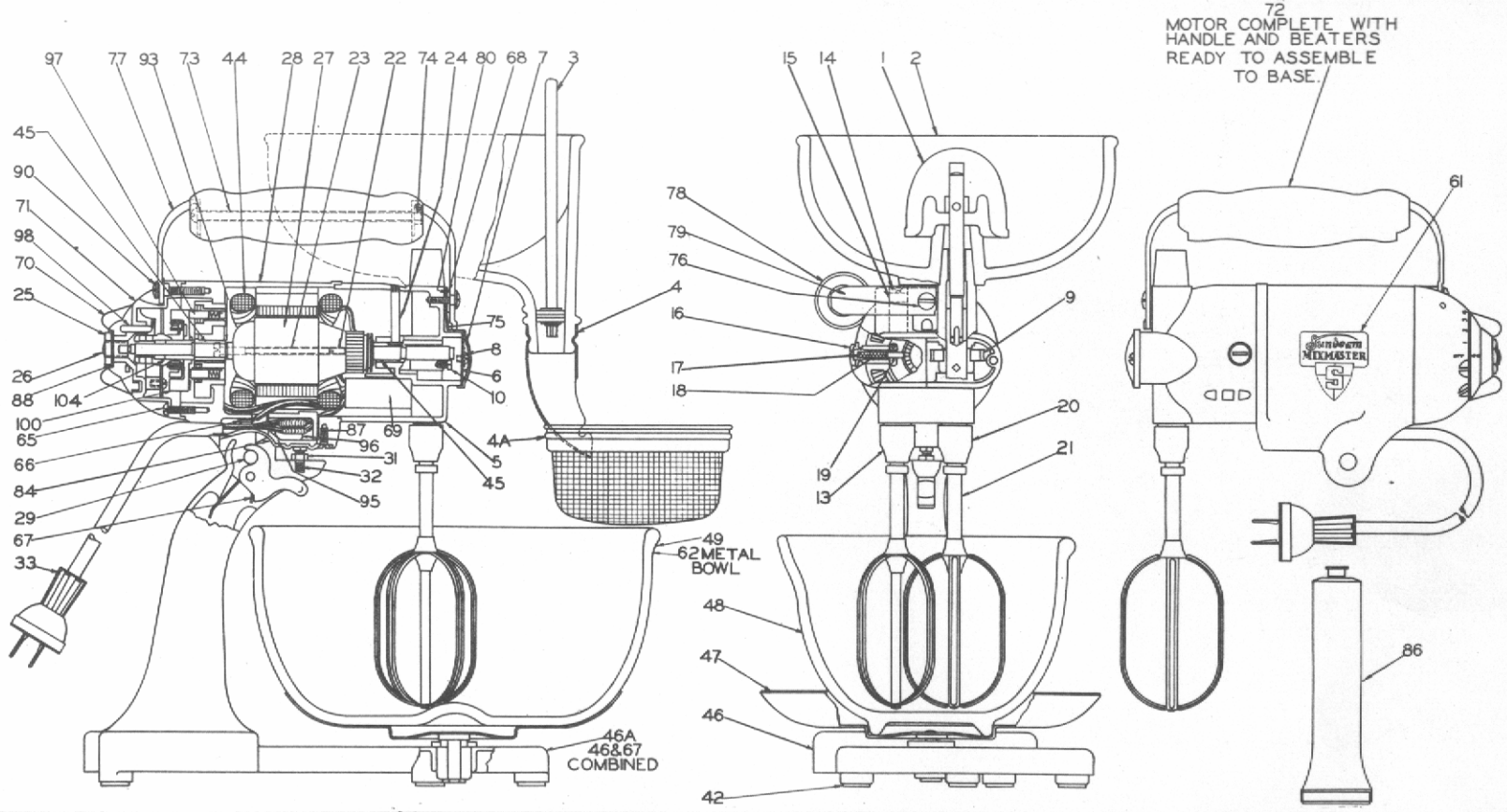
As Manufactured beginning
May 16, 1935.

DIAGRAM SHOWING PARTS OF SUNBEAM MIXMASTER

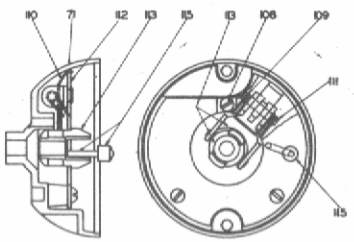
Model 1 (One) Automatic

WHEN REFERRING TO THIS MIXMASTER
ALWAYS MENTION MODEL 1 AUTOMATIC
(See Model No. on Name Plate)

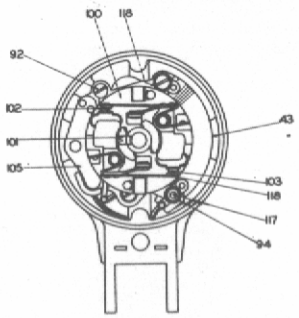
The Numbers on This Page Are Only Diagram Numbers.
See List of Part Numbers and Prices
ORDER ONLY BY PART NUMBER



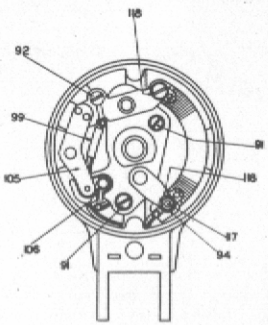
Switch Cover and Governor Slide Assembly (Switch Knob removed)



Rear View of Motor showing Governor Disc Assembly and Switch Mounting Bracket (Switch cover and Governor Slide removed)



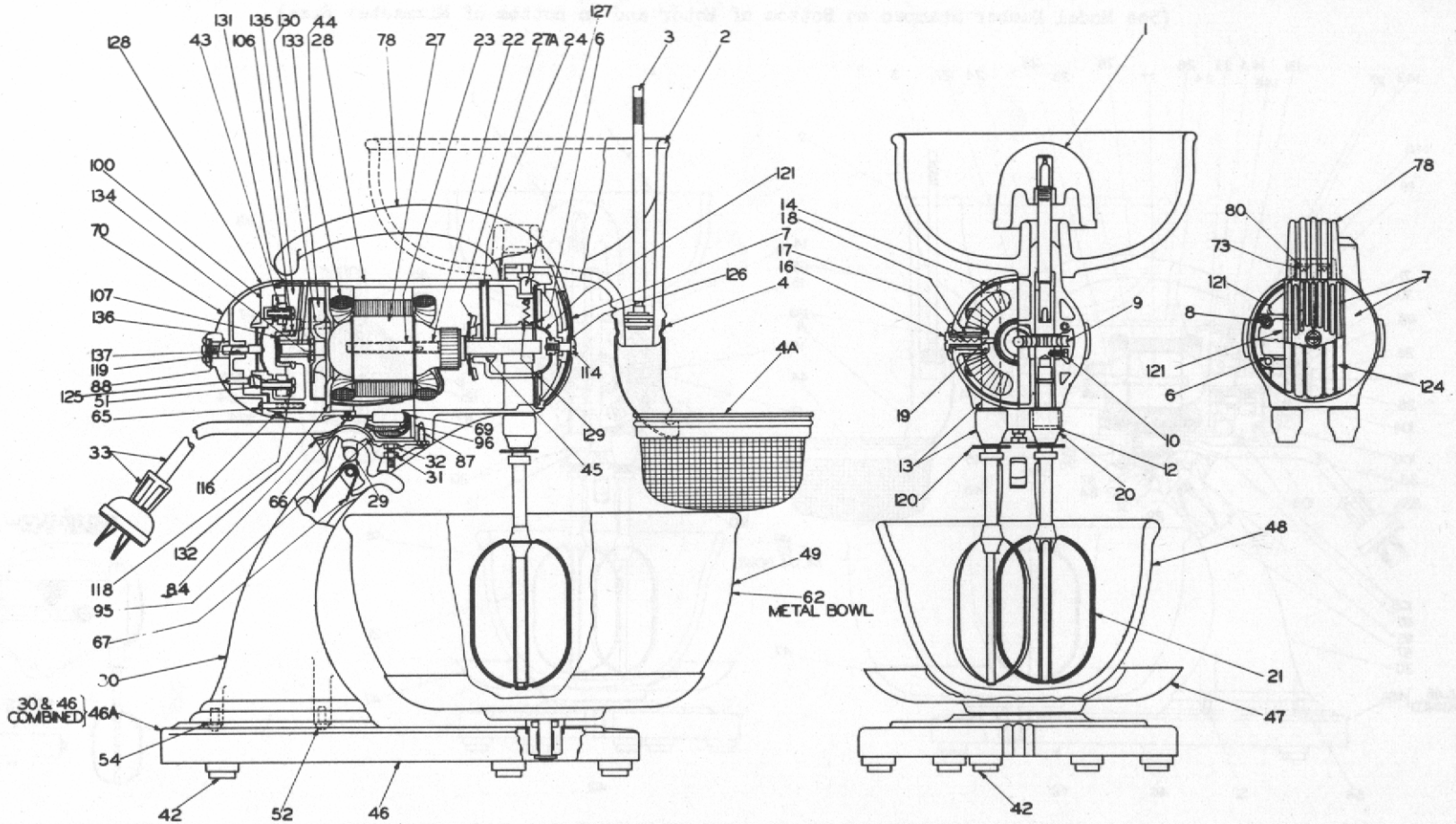
Rear View of Motor showing Switch Mounting Bracket Assembly (Switch cover and Governor removed)

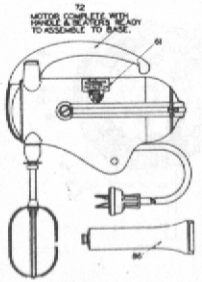


As Manufactured beginning
August 6, 1936.

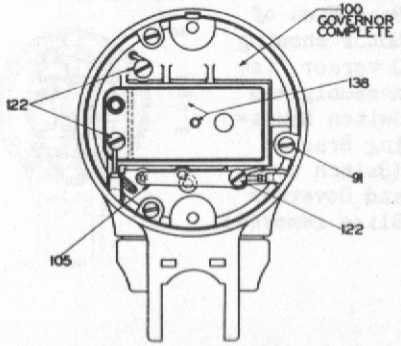
DIAGRAM SHOWING PARTS OF SUNBEAM MIXMASTER
Model 3 Automatic
WHEN REFERRING TO THIS MIXMASTER
ALWAYS MENTION MODEL 3 AUTOMATIC
(See Model Number Stamped on Bottom of Mixmaster Base)

The Numbers on This Page Are Only Diagram Numbers. See List of Part Numbers and Prices
ORDER ONLY BY PART NUMBER

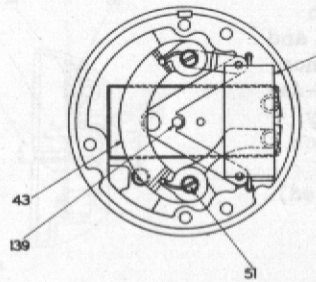




Other side of Governor Assembly with Resistor and Governor Condenser mounted in position.



Rear View of Motor Showing Governor Assembly (Rear Motor Cover removed)



As Manufactured beginning
November 2, 1936 - Model 3A
(Ivory & Green)
February 24, 1937 - Model 3B
(Black & White)

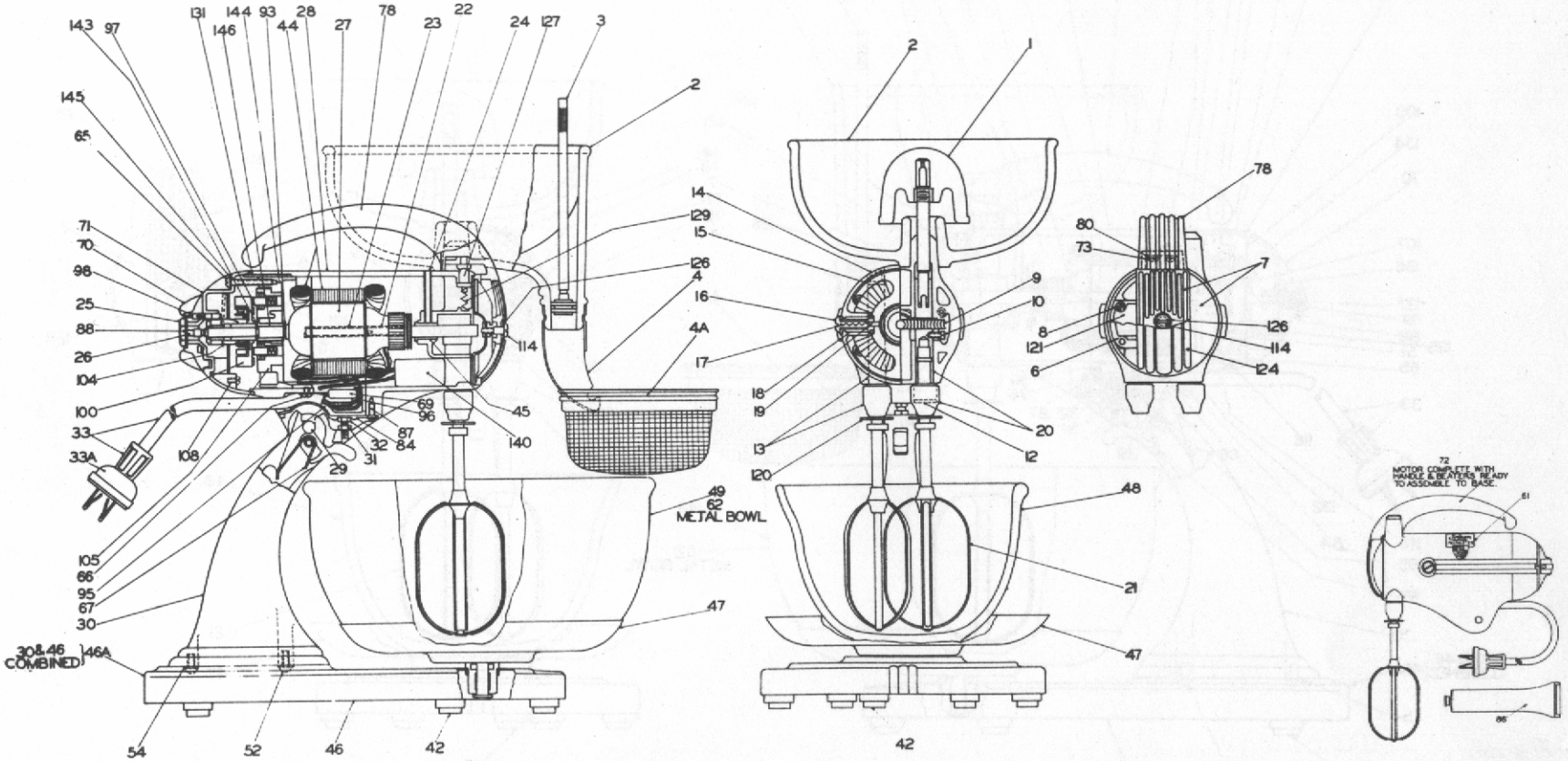
DIAGRAM SHOWING PARTS OF SUNBEAM MIXMASTER

Model 3A Automatic (Ivory and Green)
Model 3B Automatic (Black and White)

NOTE: Always mention model number when ordering colored parts.
Except for difference in color Models 3A and 3B are alike.

The Numbers on This Page
Are Only Diagram Numbers.
See List of Part Numbers
and Prices
ORDER ONLY BY PART NUMBER.

(See Model Number Stamped on Bottom of Motor and on Bottom of Mixmaster Base).



Switch Cover and Governor Slide Assembly (Switch Knob removed)

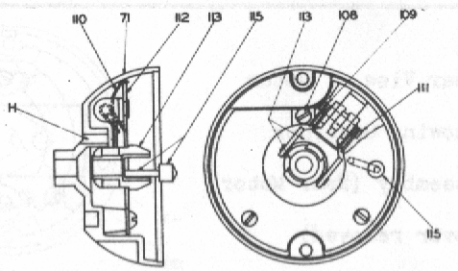


FIG. C

Rear View of Motor showing Governor Disc Assembly and Switch Mounting Bracket (Switch cover and Governor Slide removed)

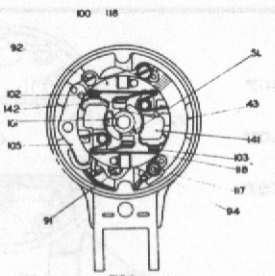


FIG. A

Rear View of Motor showing Switch Mounting Bracket Assembly (Switch cover and Governor removed)

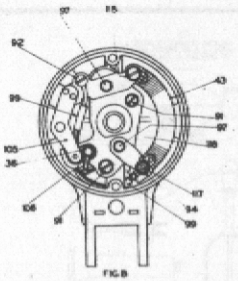


FIG. B

SUNBEAM APPLIANCE PARTS LIST

Key No.	Part No.	Description of Part	Models					
27A	----	Centrifugal Brake (Not supplied separately - Furnished with Armature - See Key No. 27)		3			$ —	
27	C66N-1	Armature Assembly 110-120-130 Volts			3A	3B	9.75	
27	G48AA	Armature Assembly 85-100 Volts (Not Available)			3A	3B		
27	G58Z	Armature Assembly 150-160 Volts (Not Available)			3A	3B		
27	G59Z	Armature Assembly 190-200-210-220-230-240-250 Volts			3A	3B	10.50	
27	G60Z	Armature Assembly 32 Volts			3A	3B	10.50	
28	74J	Motor Case	1				2.75	
28	80X	Motor Case (Not Available)		3				
28	80X-1	Motor Case (ivory finish) (Not Available)			3A			
28	80X-2	Motor Case (white finish) (Not Available)				3B		
29	P20709	Hinge Pin	1	3	3A	3B	.15	
30	2X	Upright only (ivory finish)		3	3A		1.90	
30	2X-1	Upright only (white finish)				3B	1.90	
31	P6649	Adjusting Screw Nut	1	3	3A	3B	.03	
32	P20751	Adjusting Screw Nut	1	3	3A	3B	.15	
33	C4Q	Cord and detachable Wall Plug Complete	1	3	3A	3B	1.25	
33A	G23Q	Detachable Wall Plug Only	1	3	3A	3B	.15	
36	P8956	Split Lock Washer (2 used)			3A	3B	.03	ea.
42	P8038	Base Pad (5 used)	1	3	3A	3B	.08	ea.
43	C82P	Resistor 85-160 Volts	1		3A	3B	.75	
43	C60Q-1	Resistor 200-250 Volts	1		3A	3B	.75	
43	C64S	Resistor 32 Volts	1		3A	3B	.75	
43	C61X	Resistor 110-160 Volts		3			.75	
43	C56Y	Resistor 200-250 Volts		3			.75	
43	C57Y	Resistor 32 Volts		3			.75	
44	G71J	Field and Coils 110-120 Volts	1				6.00	
44	G40Q	Field and Coils 125-130 Volts	1				6.75	
44	G41Q	Field and Coils 150-160 Volts (Not Available)	1					
44	G42Q	Field and Coils 200 Volts	1				6.75	
44	G43Q	Field and Coils 210 Volts	1				6.75	
44	G44Q	Field and Coils 230 Volts	1				6.75	
44	G45Q	Field and Coils 240 Volts	1				6.75	
44	G46Q	Field and Coils 250 Volts	1				6.75	
44	G63S	Field and Coils 32 Volts	1				6.75	
44	G67Q	Field and Coils 220 Volts	1				6.75	
44	G17Y	Field and Coils 110-120 Volts		3			6.00	
44	G45Y	Field and Coils 125-130 Volts		3			6.75	
44	G46Y	Field and Coils 150-160 Volts		3			6.75	
44	G47Y	Field and Coils 190-210 Volts		3			6.75	
44	G48Y	Field and Coils 220 Volts		3			6.75	
44	G49Y	Field and Coils 230-250 Volts		3			6.75	
44	G55Y	Field and Coils 32 Volts		3			6.75	
44	G14Z	Field and Coils 110-120 Volts			3A	3B	6.75	
44	G47AA	Field and Coils 85-100 Volts			3A	3B	6.75	
44	G45Y-1	Field and Coils 125-130 Volts			3A	3B	6.75	
44	G46Y-1	Field and Coils 150-160 Volts			3A	3B	6.75	
44	G47Y-1	Field and Coils 190-210 Volts			3A	3B	6.75	
44	G48Y-1	Field and Coils 220 Volts			3A	3B	6.75	
44	G49Y-1	Field and Coils 230-250 Volts			3A	3B	6.75	
44	G55Y-1	Field and Coils 32 Volts			3A	3B	6.75	
45	----	Armature Bearing Bushing - Oilless type (Note: When bearings in Model 1, 3, 3A and 3B Automatic need attention, return motor to factory for service.)	1	3	3A	3B	—	
46	G93AA	Base - Upright and Pads	1				5.25	
46	----	Base and Pads Assembled		3			2.25	

(Note: Model 3 Mixmaster nameplate and voltage is stamped on bottom of base; therefore this part must be ordered according to voltage,) as follows:

Base C3X - 110-120 Volts
Base C3X-1 125-130 Volts
Base C3X-2 150-160 Volts
Base C3X-3 190-210 Volts
Base C3X-4 220 Volts
Base C3X-5 230-250 Volts
Base C3X-6 32 Volts

SUNBEAM APPLIANCE PARTS LIST

Key No.	Part No.	Description of Part			Models		
46	----	Base and Pads Assembled (ivory finisn) (Note: Model 3A Mixmaster nameplate and voltage is stamped on bottom of base; therefore, this part must be ordered according to voltage,) as follows: Base C92AA - 110-120 Volts Base C92AA-1 - 125-130 Volts Base C92AA-2 - 150-160 Volts Base C92AA-3 - 190-210 Volts Base C92AA-4 - 220 Volts Base C92AA-5 - 230-250 Volts Base C92AA-6 - 32 Volts D. C. Base C92AA-7 - 85-100 Volts			3A		$ 2.25
46	----	Base and Pads Assembled (black finish) (Note: Model 3B Mixmaster nameplate and voltage is stamped on bottom of base; therefore, this part must be ordered according to voltage) as follows: Base C91AB - 110-120 Volts Base C91AB-1 - 125-130 Volts Base C91AB-2 - 150-160 Volts Base C91AB-3 - 190-210 Volts Base C91AB-4 - 220 Volts Base C91AB-5 - 230-250 Volts Base C91AB-6 - 32 Volts D. C. Base C91AB-7 - 85-100 Volts				3B	2.25
46A	C93AA	Base - Upright complete with Trigger	1				5.25
46A	----	Base and Upright Assembly complete with Trigger (Note: Model 3 Mixmaster nameplate and voltage is stamped on bottom of base; therefore, this part must be ordered according to voltage) as follows: Base Assembly G99W - 110-120 Volts Base Assembly G99W-1 - 125-130 Volts Base Assembly G99W-2 - 150-160 Volts Base Assembly G99W-3 - 190-210 Volts Base Assembly G99W-4 - 220 Volts Base Assembly G99W-5 - 230-250 Volts Base Assembly G99W-6 - 32 Volts		3			5.25
46A	----	Base and Upright complete with Trigger (ivory finish) (Note: Model 3A Mixmaster nameplate and voltage is stamped on bottom of base; therefore, this part must be ordered according to voltage) as follows: Base Assembly G93AA - 110-120 Volts Base Assembly G93AA-1 - 125-130 Volts Base Assembly G93AA-2 - 150-160 Volts Base Assembly G93AA-3 - 190-210 Volts Base Assembly G93AA-4 - 220 Volts Base Assembly G93AA-5 - 230-250 Volts Base Assembly G93AA-6 - 32 Volts D. C. Base Assembly G93AA-7 - 85-100 Volts			3A		5.25
46A	----	Base and Upright complete with Trigger (black and white finish) (Note: Model 3B Mixmaster nameplate and voltage is stamped on bottom of base; therefore, this part must be ordered according to voltage) as follows: Base Assembly G90AB - 110-120 Volts Base Assembly G90AB-1 - 125-130 Volts Base Assembly G90AB-2 - 150-160 Volts Base Assembly G90AB-3 - 190-210 Volts Base Assembly G90AB-4 - 220 Volts Base Assembly G90AB-5 - 230-250 Volts Base Assembly G90AB-6 - 32 Volts D. C. Base Assembly G90AB-7 - 85-100 Volts				3B	5.25
47	C88X	Ball Bearing Disc for Mixing Bowls (ivory finish)	1	3	3A		1.25

SUNBEAM APPLIANCE PARTS LIST

Key No.	Part No.	Description of Part	Models				Price	
47	C88X-1	Ball Bearing Disc for Mixing Bowls (black finish)				3B	$ 1.25	
48	P20782-1	Small Glass Mixing Bowl (white)	1	3	3A	3B	1.05	
49	P20775-2	Large Glass Mixing Bowl (white)	1	3	3A	3B	1.48	
51	9Y	Resistor Fastening Screw (2 used)		3			.03	ea.
52	P6319	Upright Fastening Screw (3 used)		3	3A	3B	.03	ea.
54	P8379	Upright Fastening Screw Washer (3 used)		3	3A	3B	.03	ea.
61	P20944	Transfer	1				.08	
61	88W	Transfer		3	3A	3B	.08	
65	P7579	Screw for switch cover	1				.08	
65	P2670	Top Screw (long) for rear cover (not shown)		3			.06	
65	P6035	Bottom Screw (short) for rear cover		3			.03	
65	P8287	Rear Cover Screw (2 used)			3A	3B	.08	ea.
66	P9202	Screw for condenser ground terminal	1	3	3A	3B	.05	
67	C20781	Trigger and Spring Assembled	1	3	3A	3B	.50	
68	P20721-1	Spacer Washer	1				.15	
69	C3M	Condenser 110 Volts	1				1.80	
69	C63Q	Condenser 200-250 Volts	1				3.00	
69	C62Q	Condenser 32 Volts	1				3.00	
69	C27X	Condenser for motor (all voltages - two wire cord)		3	3A	3B	.50	
70	49J	Switch Knob	1				.40	
70	11X	Switch Knob		3			.40	
70	27Z	Switch Knob			3A	3B	.40	
71	55J	Switch Cover Only (Not Available)	1					
71	99Y	Switch Cover Only (ivory finish)			3A		1.15	
71	99Y-1	Switch Cover Only (white finish)				3B	1.15	
72	G48J	Motor Complete with handle (Not Available)	1					
72	G8X-1	Motor Complete with handle and beaters 110-120 Volts (ivory finish) (Not Available)			3A			
72	G92AB	Motor Complete with handle and beaters 110-120 Volts (white finish) (Not Available)				3B		
73	27H	Handle Bolt	1				.20	
73	E116	Handle Screw (2 used)		3	3A	3B	.03	ea.
74	P7332	Handle Bolt Nut	1				.03	
75	P20720	Handle Lock Spring	1				.15	
76	P20742-1	Front Handle Bracket Screw - see Key No. 90 for rear screw	1				.15	
77	P20743-2	Handle Bracket - rear	1				.50	
78	84J	Handle	1				.30	
78	C81X	Bakelite Motor Handle		3	3A	3B	1.05	
79	P20746-1	Handle Bracket - Front	1				.50	
80	P20791	Handle Lock Spring Washer	1				.15	
80	P8234	Handle Split Lock Washer (2 used)		3	3A	3B	.03	ea.
84	81N	Terminal Box Cover (Not Available)	1					
84	17X-1	Terminal Box Cover		3			.15	
84	----	Terminal Box Cover (ivory finish)			3A		.15	
		Order according to voltage as listed below:						
		17X-1 Stamped 110-120 Volts						
		94AA Stamped 85-100 Volts (Not Available)						
		44Z Stamped 32 Volts D. C. (Not Available)						
		46Z Stamped 125-130 Volts (Not Available)						
		47Z Stamped 150-160 Volts (Not Available)						
		48Z Stamped 190-210 Volts (Not Available)						
		49Z Stamped 220 Volts (Not Available)						
		50Z Stamped 230-250 Volts (Not Available)						
84	----	Terminal Box Cover (white finish)				3B	.15	
		Order according to voltage as listed below:						
		87AB Stamped 110-120 Volts						
		87AB-1 Stamped 125-130 Volts (Not Available)						
		87AB-2 Stamped 150-160 Volts (Not Available)						
		87AB-3 Stamped 190-210 Volts (Not Available)						
		87AB-4 Stamped 220 Volts (Not Available)						
		87AB-5 Stamped 230-250 Volts (Not Available)						
		87AB-6 Stamped 32 Volts D. C. (Not Available)						
		87AB-7 Stamped 85-100 Volts (Not Available)						

SUNBEAM APPLIANCE PARTS LIST

Key No.	Part No.	Description of Part					Price	
86	P20846	Special Mixmaster Grease (2 oz. tube)	1	3	3A	3B	$ .40	
86	P21016	Special Mixmaster Grease (1 lb. can)	1	3	3A	3B	1.18	
87	33Q	Terminal Box Cover Screw	1	3	3A	3B	.03	
88	76N	Thrust Screw Nut Washer	1		3A	3B	.08	
88	15X	Switch Knob Washer		3			.08	
90	70N	Rear Handle Bracket Stud - see Key No. 76 for front handle bracket screw	1				.15	
91	32Q	Mounting Bracket Screw (2 used)	1		3A	3B	.03	ea.
91	16Y	Mounting Plate Screw (3 used)		3			.03	ea.
92	P6439	Brass Screw for upper resistance bracket	1		3A	3B	.03	
93	65N	Tension Washer for limiting armature end play	1		3A	3B	.08	
94	66P	Hexagon Brass Nut for mounting bracket (2 used)	1		3A	3B	.03	ea.
95	48AR	Soft Rubber Terminal Insulation Cover	1				.08	
95	48AR	Soft Rubber Terminal Insulation Cover		3	3A	3B	.08	
96	83N	Terminal Insulation Box	1				.25	
96	13X	Terminal Insulation Box		3	3A	3B	.25	
97	C30Q	Governor Carbon Brush and Spring Assembled (2 used)	1		3A	3B	.55	ea.
98	67J	Cam Push Pin (not adjustable) (Not Available)	1					
98	G52AR-1	Adj. Cam Push Pin & Nut Assem.			3A	3B	.25	
99	33X-1	Insulating Sleeve for field lead wires (2 used) Not shown.	1	3			.08	ea.
99	33X-1	Insulating Sleeve for field lead wires (long)			3A	3B	.08	
99	39Z	Insulating Sleeve for field lead wires (short)			3A	3B	.08	
100	G98W	Governor Disc Assembly Complete - see separate diagrams	1		3A	3B	2.85	
100	C50Y	Governor Assembly (includes Bakelite) Governor Mounting Plate, Governor Diaphragm, Contact Points and Leads riveted on Bakelite Plate - does not include condenser or resistor.		3			2.85	
101	35Q	Governor Set Screw	1		3A	3B	.15	
102	----	Breaker Points - not supplied separately - see Key No. 100					--	
103	----	Breaker Points - not supplied separately - see Key No. 100					--	
104	----	Governor Slide - see separate diagrams and Key No. 113					--	
105	C83P	Switch Mounting Bracket Assembly (does not include resistor)	1		3A	3B	1.15	
105	----	Switch Lever Assembly - not supplied separately see Key No. 100		3			--	
106	P20927	4-36 Special Hexagon Nut (2 used)	1		3A	3B	.03	ea.
106	39X	Armature Thrust Adjustment Lock Nut		3			.08	
107	C58Y	Armature Thrust Adjustment Cap		3			.40	
108	P1724	Round Head Screw for baffle plate (3 used)	1		3A	3B	.03	ea.
109	58P	Double Torsion Spring	1		3A	3B	.15	
110	53P	Felt Oiling Strip	1		3A	3B	.03	
111	56P	Spring Pin	1		3A	3B	.08	
112	C96N	Bafl. Plate & Spring Bracket Assem. (Not Available)	1		3A	3B		
113	C89N	Governor Slide, Bearing and Lever Assembled	1		3A	3B	1.10	
114	4Y	Grille & Fr. Motor Cover Ret. Screw		3	3A	3B	.15	
115	C92N	Switch Rod and Bakelite Insulator Assembled	1		3A	3B	.25	
116	67X	Rubber Gasket for rear cover and mounting bracket		3			.08	
117	73P-1	Special Machine Screw (Not Available)	1		3A	3B		
118	98P	Washer (2 used)	1		3A	3B	.03	ea.
118	P8956	Resistor Mounting Lock Washer (2 used)		3			.03	ea.
119	16X	Switch Knob Screw		3			.03	
120	31Y	Whipper release washer - used in C33Y Whipper only		3	3A	3B	.15	
121	C24X	Gear Case Cover		3	3A	3B	.30	
122	P7881	Binder Head Screw for wire terminal (3 used)		3			.03	ea.
124	18X	Air Grille		3	3A	3B	.40	
125	19X	Switch Pin		3			.15	
126	20X	Spring Washer for Fr. cover & grille		3	3A	3B	.08	
127	96X	Handle Catch Pin		3	3A	3B	.08	
128	22X	Rear Motor Cover (Not Available)		3				
129	7Y	Spring for handle catch pin		3	3A	3B	.08	

SUNBEAM APPLIANCE PARTS LIST

Key No.	Part No.	Description of Part		Models		Price
130	36X	Fan Housing Retaining Stud (3 used) (Not Available)	3			
131	6Y	Rear Cover Locating Key	3	3A	3B	.08
132	44X	Baffle Plate (Not Available)	3			
133	45X	Fan	3			.40
134	46X	Fan Retaining Nut	3			.08
135	C50X	Fan Housing & Rear Bearing Bushing Assem. (Not Avail.)	3			
136	71X	Cam Pin Nut	3			.15
137	C72X	Speed Adjustment Cam Pin Assembled	3			.15
138	----	Governor Diaphragm and Contact Assembled - not supplied separately - see Key No. 100	3			—
139	----	Governor Fixed Contact Assembly - not supplied separately - see Key No. 100	3			—
140	C59X	Condenser for governor 160 Volts and less	3			.75
140	C94X	Condenser for governor 190 Volts and over (Not Avail.)	3			
140	C38Z	Condenser for governor 85-160 Volts		3A	3B	1.15
140	C57Z	Condenser for governor 190-250 Volts (Not Available)		3A	3B	
140	C59AA	Condenser for governor 32 Volts D. C.		3A	3B	1.50
141	----	Governor Counterweight - not sold separately - see Key No. 100	1	3A	3B	—
142	----	Bakelite Button - not sold separately - see Key No. 100	1	3A	3B	—
143	65N	Tension Washer for limit. arm. end play		3A	3B	.08
144	----	Rear Bearing and Bracket Assembly - see Key No. 45		3A	3B	—
145	41Z	Shakeproof Lock Washer for rear cover screw (2 used)	3	3A	3B	.03
146	----	Rear Armature Bearing Bushing Oilless Type - see Note Key No. 45		3A	3B	—